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EXAMINER

TABATABAI, ABOLFAZL

ART UNIT

PAPER NUMBER

2625

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/817,037	Applicant(s) SATO, KIYOHIDE	
	Examiner Abolfazl Tabatabai	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 13, 14, 16, 17, 19-22, 28-32, 34-36, 40, 41, 43, 44, 46-49, 55 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/22/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 1-5,7-9,13,14,16,17,19-22,28-32,34-36,40,41,43,44,46-49,55 and 56.

Final Action

Response to Amendments/Arguments

1. Applicant's arguments, see (pages 19-20), filed November 8, 2004, with respect to the rejection(s) of claims 1-5, 7-9, 13, 14, 16, 17, 19-32, 40, 41, 43, 44 and 46-56 under Katayama et al (U S 6,191,808 B1) and Katayama et al (U S 5,789,791) have been fully considered and are not persuasive. Therefore, This Office Action Made Final.
2. Applicant argues in essence that the prior art does not teach or suggest updating detection parameters based on an image photographed by a second photographing means whose position and orientation are known. Examiner disagrees and indicates that [according to Katayama on fig. 1 photo-taking viewpoint coordinate system (element 5) for storing data of a coordinate system of photo-taking position for each image in the multi-viewpoint image database (element 3) a multi-viewpoint image parameter (element 6) for holding image parameters of images in the multi-viewpoint image database, and a viewpoint parameter calculating (element 7) for calculating a viewpoint parameter based on a signal from the viewpoint detector(element 2) and outputting an updated signal (element 15) when the user changes the position of the viewpoint (see column 1, lines 37-45; column 5, lines 40-47 and column 9, lines 9, lines 22-25)].

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4, 5, 7, 13, 14, 16, 17, 19-24, 28, 29, 31, 32, 34, 40, 41, 43, 44, 46-51, 55 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Katayama et al (U S 6,191,808 B1).

Regarding claim 1, Katayama discloses a specific point detecting device for detecting positions of one or more specific points on a target image, comprising:

updating means for updating detection parameters for detecting said specific points (fig. 1 element 2; column 4, lines 45-68; column 5, lines 40-47; column 3, lines 14-19, and column 9, lines 22-25), in such a way as to follow changes in how said specific points on said target image are viewed (column 5, lines 16-28); and,

detecting means for detecting the position of said specific points on said target image based on the detection parameters updated by said updating means (column 2, lines 9-18).

Regarding claim 2, Katayama discloses the device wherein said target image is a first photographed image photographed by first photographing means that is movable

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(column 1, lines 37-45), and said specific points are static specific points in a real space (column 20, lines 16-20).

Regarding claim 4, Katayama discloses the device wherein there is a plurality of said first photographing means (column 1, lines 37-45);

said detecting means comprises a plurality of detecting units corresponding respectively to said plurality of first photographing means (fig. 20 element 120-123), and

said plurality of detecting units each detects the positions of said specific points in the first photographed image photographed by corresponding said first photographing means (fig. 20 element 120-123), based on the detection parameters updated by said updating means (column 5, lines 40-47).

Regarding claim 5, Katayama discloses the device according to claim 2, wherein said updating means comprises second photographing means in which the position and posture of the viewpoint and the focal distance are fixed (fig. 20 element 121; column 15, lines 46-58 and column 17, lines 34-39); and,

generating means for generating said detection parameters (column 5, lines 40-47), based on a second photographed image photographed by said second photographing means (fig. 20; element 121); and,

updates current detection parameters to detection parameters generated by said generating means (column 5, lines 40-47).

Regarding claim 7, Katayama discloses the device comprising a plurality of second photographing means fixed on different viewpoint positions as said second photographing means (column 15, lines 46-58);

wherein said generating means generates said detection parameters based on such a plurality of second photographed images (column 5, lines 40-47).

Regarding claim 13, Katayama discloses the device wherein if there is a plurality of detection parameters corresponding to the same specific point, said detecting means detects the specific point based on each detection parameter, and a detected position by the detection parameter having the best evaluation value of detection accuracy is adopted, thereby detecting the position of the specific point (column 5, lines 15-37).

Regarding claim 14, Katayama discloses the device wherein said generating means comprises supplying means for supplying the position or area of said specific point on said second photographed image (column 5, lines 40-47), and extracts a partial image including said specific point from said second photographed image based on the position or area supplied by said supplying means (column 11, lines 41-45), and generates said detection parameters based on the partial image (column 4, lines 40-67).

Regarding claim 16, Katayama discloses the device wherein said supplying means retains as known information the three-dimensional position of said specific point and camera parameters of said second photographing means (column 1, lines 44-60), comprises specific point position calculating means for calculating the position of said specific point on said second photographed image, based on the three-dimensional position of said specific point and the camera parameters of said second photographing means (column 1, lines 44-60); and,

supplies the position calculated by said specific point position calculating means (column 5, lines 15-37).

Regarding claim 17, Katayama discloses the device wherein said supplying means comprises feature extracting means nor extracting featured partial area from said second photographed image (column 9, lines 22-27), and supplies the position or area or said featured partial area extracted by said feature extracting means (column 5, lines 15-37).

Regarding claim 19, Katayama discloses the device wherein said generating means generates detection parameters based on a plurality of photographed images photographed at a plurality of times by said second photographing means (column 1, lines 37-45).

Regarding claim 20, Katayama discloses the device wherein said updating means determines timing in which update of detection parameters is performed, based on the contents of said second photographed image (column 15, lines 40-47).

Regarding claim 21, Katayama discloses the device wherein said updating means performs update of detection parameters, if a degree of difference between a new second photographed image and the second photographed image at the time of latest collate of detection parameters exceeds a predetermined value (column 9, lines 35-41).

Regarding claim 22, Katayama discloses the device wherein said updating means controls update of detection parameters, based on changes in detection parameters generated by said generating means (column 4, lines 40-67).

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Regarding claim 23, Katayama et al (U S 6,191,808 B1) discloses the device wherein said updating means updates detection parameters at a predetermined time interval (column 9, lines 38-56).

Regarding claim 24, Katayama discloses the device wherein said updating means comprises storing means for storing two or more kinds of detection parameters prepared in advance for each of said specific points (column 1, lines 40-67); and,

selecting means for selecting a detection parameter for detecting each specific point from two or more kinds of detection parameters stored in said storing means, in such a way as to follow changes in how the specific point is viewed (column 8, lines 11-20); and,

updates current detection parameters to detection parameters selected by said selecting means (column 8, lines 11-20).

Claim 28, is similarly analyzed as claim 1 above.

Claim 29, is similarly analyzed as claim 2 above.

Claim 31, is similarly analyzed as claim 4 above.

Claim 32, is similarly analyzed as claim 5 above.

Claim 34 is similarly analyzed as claim 7 above.

Claim 40, is similarly analyzed as claim 13 above.

Claim 41, is similarly analyzed as claim 14 above.

Claim 43, is similarly analyzed as claim 16 above.

Claim 44, is similarly analyzed as claim 17 above.

Claim 46, is similarly analyzed as claim 19 above.

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Claim 47, is similarly analyzed as claim 20 above.

Claim 48, is similarly analyzed as claim 21 above.

Claim 49, is similarly analyzed as claim 22 above.

Claim 50, is similarly analyzed as claim 23 above.

Claim 51, is similarly analyzed as claim 24 above.

Claims 55 and 56 are similarly analyzed as claim 1 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 8, 9, 25-27, 30, 35, 36 and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama et al (U S 6,191,808 B1) in view of Katayama et al (U S 5,789,791).

Regarding claim 3, Katayama et al (U S 6,191,808 B1) disclose the device wherein said detecting means further comprises:

first calculating means for calculating the viewpoint position and/or posture of said first photographing means (column 13, lines 60-65).

However, Katayama (U S 6,191,808 B1) is silent about the specific details regarding the step of:

narrowing means for narrowing specific points to be detected, based on the viewpoint position and/or posture calculated by said first calculating means.

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In the same field (image processing system) of endeavor, however, Katayama et al (U S 5,789,791) disclose multieye imaging system comprising the step of:

narrowing means for narrowing specific points to be detected, based on the viewpoint position and/or posture calculated by said first calculating means (column 20, lines 47-56).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use narrowing method as taught by Katayama et al (U S 5,789,791) in the system of Katayama et al (U S 6,191,808 B1) because Katayama et al (U S 5,789,791) provides a multieye imaging system which is capable of obtaining an image with a less amount of deterioration of an image quality and an inconspicuous boundary line, also capable of having an image field enough to acquire sufficient effects as a panoramic image and minimizing a deterioration of a resolution power in the vertical direction even at the aspect-ratio-variable time.

Regarding claim 8, Katayama et al (U S 6,191,808 B1) disclose the device wherein said generating means generates detection parameters for the same specific point respectively based on photographed images obtained by a plurality of second photographing means, and

said detecting means detects the specific point based on a plurality of detection parameters with respect to the same point (column 30-, lines 33-40).

However, Katayama (U S 6,191,808 B1) is silent about the specific details regarding the step of:

plurality of second photographing means photographs one or more specific points in an overlapping manner.

In the same field (image processing system) of endeavor, however, Katayama et al (U S 5,789,791) disclose multieye imaging system comprising the step of:

plurality of second photographing means photographs one or more specific points in an overlapping manner (column 2, lines 27-38).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use overlapping manner as taught by Katayama et al (U S 5,789,791) in the system of Katayama et al (U S 6,191,808 B1) because Katayama et al (U S 5,789,791) provides a multieye imaging system which is capable of obtaining an image with a less amount of deterioration of an image quality and an inconspicuous boundary line, also capable of having an image field enough to acquire sufficient effects as a panoramic image and minimizing a deterioration of a resolution power in the vertical direction even at the aspect-ratio-variable time.

Regarding claim 9, Katayama et al (U S 6,191,808 B1) discloses the device wherein said detecting means comprises viewpoint position calculating means for calculating the viewpoint position of said first photographing means (column 11, lines 46-50); and,

detects the positions of specific points, using detection parameters generated based on second photographing means nearest to the viewpoint position calculated by said viewpoint position calculating means, if there is a plurality of detection parameters corresponding to the same specific point (column 24, lines 19-23).

Regarding claim 25, Katayama (U S 6,191,808 B1) is silent about the specific details regarding the step of the selecting means selects detection parameters based on the average intensity value of said target image.

In the same field (image processing system) of endeavor, however, Katayama et al (U S 5,789,791) disclose multieye imaging system comprising the step of:

selecting means selects detection parameters based on the average intensity value of said target image (column 7, lines 27-31 and column 15, lines 41-46).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use intensity value as taught by Katayama et al (U S 5,789,791) in the system of Katayama et al (U S 6,191,808 B1) because Katayama et al (U S 5,789,791) provides a multieye imaging system which is capable of obtaining an image with a less amount of deterioration of an image quality and an inconspicuous boundary line, also capable of having an image field enough to acquire sufficient effects as a panoramic image and minimizing a deterioration of a resolution power in the vertical direction even at the aspect-ratio-variable time.

Regarding claim 26, Katayama (U S 6,191,808 B1) is silent about the specific details regarding the step of the detection parameter is a template image including said specific points, and

said detecting means performs template matching for said target image to detect positions of said specific points on said image.

In the same field (image processing system) of endeavor, however, Katayama et al (U S 5,789,791) disclose multieye imaging system comprising the step of:

the detection parameter is a template image including said specific points, and said detecting means performs template matching for said target image to detect positions of said specific points on said image (column 13, lines 37-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use narrowing method as taught by Katayama et al (U S 5,789,791) in the system of Katayama et al (U S 6,191,808 B1) because Katayama et al (U S 5,789,791) provides a multi-eye imaging system which is capable of obtaining an image with a less amount of deterioration of an image quality and an inconspicuous boundary line, also capable of having an image field enough to acquire sufficient effects as a panoramic image and minimizing a deterioration of a resolution power in the vertical direction even at the aspect-ratio-variable time.

Regarding claim 27, Katayama (U S 6,191,808 B1) is silent about the specific details regarding the step of the detection parameters are information expressing color and/or intensity unique to said specific points, and said detecting means extracts areas having the color and/or intensity unique to said specific points from said target image, thereby detecting the positions of said specific points on the image.

In the same field (image processing system) of endeavor, however, Katayama et al (U S 5,789,791) disclose multi-eye imaging system comprising the step of:

the detection parameters are information expressing color and/or intensity unique to said specific points (column 7, lines 27-31 and column 15, lines 41-46), and said detecting means extracts areas having the color and/or intensity unique to said specific

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points from said target image, thereby detecting the positions of said specific points on the image (fig. 31 element 833).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use intensity unique as taught by Katayama et al (U S 5,789,791) in the system of Katayama et al (U S 6,191,808 B1) because Katayama et al (U S 5,789,791) provides a multieye imaging system which is capable of obtaining an image with a less amount of deterioration of an image quality and an inconspicuous boundary line, also capable of having an image field enough to acquire sufficient effects as a panoramic image and minimizing a deterioration of a resolution power in the vertical direction even at the aspect-ratio-variable time.

Claim 30, is similarly analyzed as claim 3 above.

Claim 35 is similarly analyzed as claim 8 above.

Claim 36, is similarly analyzed as claim 9 above.

Claim 52, is similarly analyzed as claim 25 above.

Claim 53, is similarly analyzed as claim 26 above.

Claim 54, is similarly analyzed as claim 27 above.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

U. S. Patent (U S 6,332,038 B1) to Funayama et al et al is cited for image processing device.

U.S. Patent (U S 6,211,911 B1) to Komiya is cited for image processing apparatus.

U.S. Patent (U S 6,333,997 B1) to Hashiya et al is cited for image processing apparatus.

U.S. Patent (5,646,679) to Yano et al is cited for image combining method and apparatus.

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Contact Information

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (703) 306-5917.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mehta Bhavesh M, can be reached at (703) 308-5246. The fax phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

Patent Examiner

Group Art Unit 2625

February 15, 2005

A-Tabatabai



**KANJIBHAI PATEL
PRIMARY EXAMINER**